ปัจจัยความเครียดของนักลงทุน
จากการศึกษาในตลาดหลักทรัพย์แห่งประเทศไทย
What Makes Investors Stressed?:
Evidence from The Stock Market of Thailand

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บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่มีผลกระทบต่อระดับความเครียดของนักลงทุนไทย โดยพิจารณา จากประเภทของเครื่องมือทางการเงินที่เลือกลงทุน พฤติกรรมการซื้อขาย และวัตถุประสงค์ในการซื้อขาย ประชากรที่ ใช้ในการวิจัยคือ นักลงทุนในตลาดหลักทรัพย์แห่งประเทศไทย จำนวน 285 คน เครื่องมือที่ใช้ในการวิจัยได้แก่ แบบสอบถามเกี่ยวกับปัจจัยที่มีผลกระทบต่อระดับความเครียดของนักลงทุนไทย สถิติที่ใช้ในการวิจัยได้แก่ ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน และการวิเคราะห์การถดถอยพหุคูณ

ผลการวิจัยพบว่า การลงทุนในใบสำคัญแสดงสิทธิอนุพันธ์ มีผลกระทบต่อระดับความเครียดอย่างมี นัยสำคัญ แต่ไม่พบผลของการลงทุนในหุ้นที่มีลักษณะราคาซื้อขายค่อนข้างถูก หรือการซื้อขายด้วยบัญชีมาร์จิ้น ในแง่ของประเภทของพฤติกรรมการซื้อขายนั้น การกระจายความเสี่ยง ซึ่งประเมินว่าจะลดความเครียด แต่ข้อมูล ที่ใช้ในการวิจัยกลับไม่สนับสนุนสมมติฐานนี้ ในขณะที่การซื้อขายด้วยความถี่สูง และการลงทุนซื้อขายภายในวันเดียว มีผลให้ความเครียดลดลง ซึ่งตรงกันข้ามกับผลที่ผู้วิจัยคาดไว้ นักลงทุนที่หาเลี้ยงชีพจากการซื้อขาย และกลุ่มที่เสพติด การซื้อขาย จะมีความเครียดที่สูงกว่า แต่ไม่พบว่ากลุ่มที่มีความน่าจะเป็นที่จะติดการพนันสูง จะมีความเครียดมากขึ้น ในส่วนนี้อาจอธิบายได้จากการที่นักลงทุนมีแรงจูงใจอื่น นอกเหนือจากกำไรทางการเงิน เช่น การลดความเครียด หรือเพื่อความบันเทิง

คำสำคัญ: ความเครียด, เครื่องมือทางการเงิน, ตลาดหุ้น, พฤติกรรมการซื้อขาย, วัตถุประสงค์ในการซื้อขาย

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Abstract

This paper examines the factors affecting Thai investors' stress level based on choice of financial instrument invested, trading behavior, and trading objectives. The samples were 285 investors in the Stock Exchange of Thailand. The research tool was a questionnaire on the factors affecting Thai investors' stress level, and the statistics used to analyze the data were percentage, mean, standard deviation and a multiple regression analysis.

The results suggest only limited evidence on the type of instruments, with just derivative warrants having a significant impact on stress level, but not investments in lottery stocks or via a margin account. In terms of trading behavior, diversification was expected to reduce stress, but the hypothesis was not supported by the data, while trading with high frequency and day trading resulted in lower stress level, contrary to our expectations. Lastly, investors trading for a living and those who are addicted to trading are more stressed; however, those with high gambling propensity was not found to be more stressful. This may be explained by motivations other than financial profits, such as stress relief or entertainment.

Keywords: Stress, Financial Instrument, Stock Market, Trading Behavior, Trading Objective

Introduction

Stock market is one of the main channels through which many investors choose to accumulate their wealth as it allows them to purchase shares of listed firms and potentially earn dividend income and upward price change. It is particularly suitable for retirement savings for working adults since value appreciation is typically linked to economic growth over time. Apart from the long-term investments, most investors also trade their stock holdings from time to time. With each trade, investors face with volatility, meaning price may move against the expectations, which represents risk and could lead to stress. The stress level experienced by investors could be very detrimental, as there are documented cases of hospitalization or worse (Engelberg & Parsons, 2016, p1227-1250). Therefore, we set out to research the factors behind the stress, specifically, the type of financial instruments, the investors' behavior, and their investment objectives. The dataset utilized in this paper is based on a survey of Thai investors. It allowed us to construct key indices, such as stress level, trading addiction, and gambling propensity, as well as, included other control variables, namely, age, gender, income level, risk tolerance, marital status, education level, financial literacy, and trading experience.

First, we examine the role of investment instrument types on investors stress. We hypothesize that a riskier instrument should make investors feel more stressed as they face higher probability of potential losses on their wealth. Two of the common high-risk instruments, namely lottery stocks (a stock with a small chance of winning very high return), and derivative warrants were considered. Besides, the use of leverage via margin accounts also allowed investors to take extra risks; therefore, it is included as another mean through which stress could rise. We find that investing in derivative warrants is indeed stressful. However, the results for trading lottery stocks and using margin accounts do not support an association with stress.

Next, we study the role of investors trading activities in stimulating stress. The activities, fielded in our survey, include whether they hold a well-diversified portfolio, trade frequently, or are day traders. Holding a diversified portfolio can mitigate risks and is expected to reduce stress. Those who trade frequently or act as a day trader (closing out position at the end of each day) are assumed to be more stressed. Our findings show that diversification does not impact stress level and investors, in fact, feel less stressed when they are more active or engage in a day trading activity. This is in contrary to our expectations and may be due to other motives, such as, investors viewing trading as a form of entertainment (Dorn & Sengmueller, 2009, p 591-603), or a way to relive stress.

Lastly, this paper investigates the investment objectives. If an investor depends on the money from trading to support his/her living, it is probable that he/she would feel more stressed. Alternatively, if the investor completes trading as a substitution for gambling, he/she may be less focused on the financial results and not feel as stressed. However, if the investor is addicted to trading, which is beyond his/her self-control, he/she might feel helpless and become more stressed than otherwise. Evidence seemed to support all three hypotheses as investors with high reliance of trading income and those who are addicted were found to feel more stressed, while gambling propensity has limited impact on stress.

Research Objectives

Our paper aims to contribute to the literature by discussing the factors that influence stress level of investors. As stress could have substantial impact on health and well-being, this has noteworthy implications to both the investors and policy makers. The individual investors are reminded to be aware of the importance of their instrument choice, their behavior, and their trading objectives, while the policy makers will gain insights to possible regulation amendments that would help manage investors' stress level and reduce any potential harmful effect.

The next section continues with the review of relevant literature on stress and trading, and it will be followed by the details on data and methodology. Then, the results on financial instruments, trading activities, trading objectives will be discussed. Finally, the last sections will offer conclusion and recommendations.

Literature Review

Many empirical works had explored the connection between stock investment and mental health or stress. For instance, McInerney, Mellor, & Nicholas (2013) studied the impact of the stock market crash in October 2008 and found that the crash represented a reduction in wealth and led to worsening of some subjective measures of mental health, such as heightened depression and the use of drugs, and that the effect was more pronounced for those holding larger investments in stocks. Schwandt (2011) concluded that a wealth increase is linked to an improvement in measures of physical and mental health of retirees in the US and that the main channel through which these effects were brought about are the psychological factors. More recently, Schwandt (2018) estimated that a 10% drop in wealth is correlated with a deterioration of 2-3% of a standard deviation in mental and physical health. Furthermore, literatures also

showed that investment stress can actually be quite lethal. For example, Ma, Chen, Jian, Song, & Kan (2010) analyzed the Shanghai stock exchange during 2006 to 2008 and found correlations between coronary heart disease deaths and daily volatility. Nevertheless, Schwartz, Pezzullo, McDonald, Poole, & Klooner (2012) studied the same issue with Dow Jones Industrial Average Index and deaths in Los Angeles, USA, and did not find that the October 2008 stock market crash to be linked with the number of cardiac deaths. In addition, there are some literature discussing the impact of health shocks on wealth (e.g. Smith, 1999); this may suggest a potential for reverse causality as well.

Investing in stocks with high risks is believed to have raised feeling of stress felt by investors. An example of such instrument is lottery stocks or penny stocks. They are stocks that have similar features as lottery tickets that they have small chance of a substantial win and high chance of small losses and their prices are low in comparison the potential rewards and the probabilities are known in advance and fixed (Kumar, 2009). Ariyabuddhiphongs (2011) put forward that the reasons why people buy lottery tickets include that they view it as a form of entertainment and lotteries are typically not regarded as gambling – although Kumar (2009) discovered that lottery stock buyers tend to have similar characteristics as gamblers. The same could be applied to investment in stocks that have high volatility and skewness; they clearly represent high risks and Bali, Cakici, & Whitelaw (2011) confirmed that they normally delivered negative returns. Other ways investors can assume additional risks and potentially cause them to be more stressed include investing in derivative warrants and trading on margin account which allows for increased use of leverage.

In terms of trading behavior, it has been long established that holding a well-diversified portfolio of stocks can help eliminate unique risks and investors should probably pursue such diversification to enjoy its benefits. However, Barber & Odean (2013) pointed out that the reality is somewhat different from this belief and Polkovnichenko (2005) showed that most investors tend to buy stocks of 1-2 companies together with some investment in funds instead. This implies that most investors are taking extra risks and that could translate into extra stress.

As for trading frequency, theory suggests that, rationally, investors should only trade when new information become available or for portfolio rebalancing purpose. However, this in contrast to what found in the practice, as the New York Stock Exchange turnover went from 78% in 1999 (Barber &Odean, 2001) to about 100% in 2004 (Glaser &Weber, 2007). Many papers concluded that this is beyond explained by rational motives such as diversification, tax, or liquidity

(Barber & Odean, 2001; Dorn & Sengmueller, 2009; Markiewicz &Weber, 2013). Intriguingly, it has been documented that this over-trading usually resulted in lower returns (Odean, 1999) with one of the main reasons being the transaction costs (Barber & Odean, 2000). Therefore, excessive trading could be another indicator for poor performance and, in turn, may be linked with higher stress level.

Another trading behavior that is shown to have higher risk and could lead investors to become more stressful is being a day trader. This means selling all stock holding by the end of the trading day and hold no position overnight. Day traders contribute to the high trading volume in the stock market each day and generally perceived by financial markets as risk takers or gamblers (Norris, 1999). Like excessive traders, day traders also found to typically lose more than make profits (Jordan & Diltz, 2003; Andersson, 2004), due largely to transaction costs of frequent trading.

The last group of factors potentially driving the stress level experienced by investors is trading objectives, for instance, they would be more stressed if they rely on the income from trading to support their living. Meanwhile, Dorn, et al. (2014), Gao &Lin (2015), Markiewicz &Weber (2013) discussed investors making stock trades in substitutes for gambling. If this is the case, investors may complete trades without proper analysis and possibly earn poor results, which, in turn, can raise stress. In a closely related phenomena, investors may be addicted to trading. Addiction is related to changes in the brain and gambling affects the brain in the same manner as substance addiction (Holden, 2010). When investors receive the rewards from trading, not only in the form of profits, but also in the form of entertainment and stress relieve, their brain is stimulated to seek repeated activity. However, trading frequently may not yield the best financial return and could make investors feel more stressed with their stock investment.

Research Methodology

    1. Data

       From the population of Thai investors, we obtain a sample of individual investors from a survey conducted by Cox, Kamolsareeratana & Kouwenberg (2020) in 2017 through a brokerage firm in Thailand. The investment consultants at these brokerage firms were tasked to invite their clients to participate in an online questionnaire, which was designed to assess individual investors trading behavior as well as their preferences (such as risk attitude), motivation to trade, and their demographic information. There was no monetary incentive on answering the questions and the respondents were free to decline the invitation to participate in the survey.

The scope of respondents of this survey is limited only to investors because our study focuses exclusively on trading behaviors and impacts of participating in the stock market. Since the proportion of Thai people who participate in the stock market is relatively small (Assanangkornchai et al., 2016), it is suitable to target directly at the investors. However, this sample might not be a good representative for the Thai investor population because the invitation is not entirely random since the investment consultants could only invite the clients under their care.

Our sample consists of 285 observations. Table 1 shows the descriptive statistic of the respondents in this survey. We examine the data based on their mean and, when appropriate, minimum, and maximum values. On average, the respondents are 36 years old and 59% of them are male. Approximately 62% of the sample is single. The sample level of education is relatively high. About 42% of the respondents have completed Bachelor Degree and 56% obtained Master Degree or higher. The average monthly income is 80,118.77 baht. This is much higher than the average income of a typical Thai. However, this is expected because most of the lower-income people can spare little excess income to invest or have limited access to the stock market.

Table 1 Summary statistics of investor survey respondents in Thailand (N = 285)

Variables	Mean	Min	Max
Age	35.56	23	70
Income[1]	80,119	15,000	300,000
Male	59%		
Single	62%		
Education			
No Bachelor Degree	2%		
Bachelor Degree	42%		
Master Degree of Higher	56%		
Occupation			
Employed	67%		
Business Owner	29%		
Retired	1%		
Unemployed/ Other	3%		

[1]Income variable is winsorized at 95%

2. Main Variables and Measurements

2.1 Stress

In the survey, we assessed respondents' perceived stress level by asking "How stressful your life has been?." The respondent could answer in a scale ranging from 1 to 7, where 1 means "Not stressful at all" and 7 indicates "Terribly stressful". In addition, we also ask another similar question "How depressed have you been?" in order to add validity to our measurement. The scale for this second question also ranges from 1 to 7 in the same manner. Then, we average the numbers from these two questions to create a stress level index. These simple questions are commonly used both by psychologists and health professionals. One of the benefits is that the questions are simple enough for the respondents to understand. Moreover, a multiple-item construct might not be cost feasible for our survey.

Table 2 presents the measured level of stress among the investors in our sample. On average, the perceived stress level for the respondents is 3.49 with a standard deviation of 1.50. Out of 285 respondents, 57 of them (20.01%) have perceived stress level of 5 or more. The result for perceived depression is quite similar to stress. The mean is at 3.66 with a standard deviation of 1.70. These two measures are averaged in order to make a single stress level index which will be used as our main dependent variable. The average value of stress level index is 3.57 with a standard deviation of 1.13. The distribution of this index looks normal (see figure 1).

Table 2 Summary statistics for the stress (N = 285)

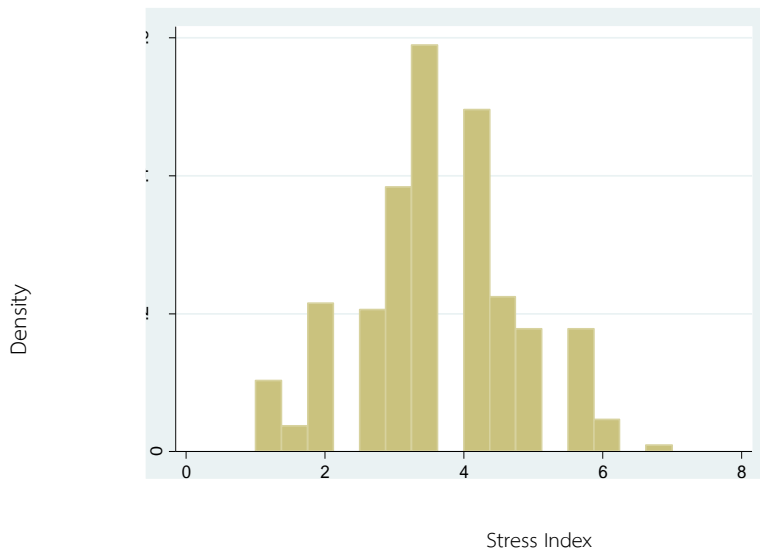| Parameters	Mean	Std.Dev	Min	Max
Perceived Stress	3.49	1.50	1	7
Perceived Depression	3.66	1.70	1	7
Stress Level Index	3.57	1.13	1	7

Figure 1 The distribution of Stress index (N = 285)

2.2 Trading Addiction and Gambling Propensity

We define trading addiction following Cox, Kamolsareeratana, & Kouwenberg. (2020) which is, in turn, based on the nine diagnostic criteria defined by the American Psychiatric Association's (APA) latest version of the Diagnostic and Statistical Manual of Mental Disorders, DSM-5 (American Psychiatric Association, 2013). Since these criteria are initially designed for gambling disorder, Cox Kamolsareeratana, & Kouwenberg. (2020) modified the questions by replacing the word 'gambling' with 'stock trading'. The objective is to make it suitable for stock trading context. The nine questions are shown as following;

1. You trade stocks in larger amounts of money to maintain your excitement.

2. You have to borrow money from your family members or friends to cover losses from stock trading.

3. You always think of ways to find money to trade stocks.

4. You have to lie to your family or friends about your trading.

5. You tried to reduce or quit trading stocks but could not.

6. You trade stocks to escape problems in your life.

7. You return to trading because you want to win back your lost money.

8. You have problems in your work, family or got divorced because of stock trading.

9. When trying to reduce or quit trading you feel irritated.

The respondents were asked to identify whether these statements match their actual behaviors. According to DSM-5 (2013), if a respondent match at least four out of nine items, he/she is considered having an addiction. Youn, Choi, Kim, and Choi (2016) use the questions from DSM-5 (2013) in his survey which consists of 1,005 subjects in Korea and confirms that the reliability of this measurement is high.

In our study, we give a value either 0 or 1 for the respond to each of these nine questions, where 1 indicates the respondent having the corresponding behavior and 0 otherwise. Then we sum the values of all questions to construct an addiction index. This index ranges from 0 to 9 where the value 9 means matching all of the statements while 0 tells that the respondent has none of these behaviors.

In addition to trading addiction, the survey asks four additional questions adopted from the Domain-Specific Risk-Attitude Scale, the DOSPERT scale (Weber, Blais, &Betz, 2002) to measure the propensity to gamble. These questions assess the likelihood that the respondents would participate in the following activities.

1. Betting a day's income on lottery tickets.

2. Betting a day's income at a card game.

3. Betting a day's income on the outcome of a sporting event (e.g. soccer, golf, horse racing).

4. Gambling a week's income at a casino if you visit one (e.g. Macau, Las Vegas in the U.S., Marina Bays Sand in Singapore, Poipet Casino at the border of Thailand-Cambodia, etc.)

The respondents could answer in a scale ranging from 1 (Unlikely) to 5 (Very Likely). Then these numbers are averaged across the four items to create a gambling propensity index.

2.3 Trading Behaviors, Instruments, and objectives

This survey asks the respondents about various aspects of their trading behaviors such as the number of individual stocks owned, trade frequency, and being a day trader. A respondent is considered a 'Day Trader' if he/she opens and closes a position within one day. Additionally, we also ask whether the respondent invest or speculate in highly volatile products such as lottery stocks, derivatives, and derivative warrants. The answers can be either '*Yes*' or '*No*' and would be used to create dummy variables.

We also ask a question "*Do you need the return from your investment for your expenses?*" in order to evaluate whether the respondents trade for their livings. Their answer can

be among '*Not At All*,' '*Some*,' or '*Needed*.' 'Not At All' means the respondents does not need to use the money from their portfolios for daily spending at all while "Needed" indicates that they trade stocks as a mean for living. Since the measurement is ordinal, we create dummy variables for all cases.

2.4 Financial Literacy

Financial literacy is measured with a set of questions developed by Van Rooij, Lusadi, & Alessie. (2011). The questions are divided into two modules; basic literacy and advanced literacy. Originally, there are five questions in the basic module and 11 questions in the advanced one. However, due to the feasibility, we decreased the number of questions to three and six for the basic and advanced modules respectively. For each financial literacy question, the answer is classified either '*Correct*' or '*Incorrect*.' Then, we count the number of '*Correct*' answers to create a *financial literacy index*. The index ranges from 0 (no correct answer) to 9 (correctly answer all questions).

3. Descriptive Statistics

Table 3 shows the descriptive statistics of the measurements we have discussed earlier. It is interesting that a large portion of the respondents have involved in high-risk products or activities. Approximately 60% of them do day trade and 62% have their hands-on lottery stocks. About half of the sample has used derivatives or derivative warrants. However, only 8% leverage through using margin account. This suggests that investors prefer pursuing greater returns via risky instruments over direct leverage through margin accounts.

Table 3 Summary statistics addiction Index, gambling propensity index, and trading information (N = 285)

Variables	Mean	Min	Max
Risk Tolerance	5.68	2	8
Financial Literacy	6.96	0	9
Addiction Index	1.19	0	9
Gambling Propensity Index	1.28	1	4
Number of Individual Stocks Owned[1]	6.46	0	80
Trades Lottery Stocks	62%		
Trades Derivative Warrants	53%		
Trading Frequency			

Variables	Mean	Min	Max
Less Than Once a Month	32%		
1 - 10 Times/Month	23%		
3 - 4 Times/Week	20%		
Almost Everyday	25%		
Uses Margin Account	8%		

[1]There are invalid values for the variable 'Number of Individual Stocks Owned.' Thus, its statistics is calculated based on 259 observations.

The respondents in this sample are financially literate. On average, the number of financial literacy questions that they correctly answered is 6.96 out of 9. This number is impressive consider that the percentage of correct answers is higher than those from Van Rooij, Lusadi, & Alessie. (2011) study. This is mainly because our sample only includes investors. Our respondents are relatively tolerant to risk, with the average score of 6.52 out of 10.

Research Finding

1. Financial Instruments

First, we examine the impact of the financial instrument choices that our respondents use in their trading activities. We hypothesize that riskier instruments would cause more stress than their safer counterparts. We focus on two instruments that are commonly traded by typical investors: lottery stocks and derivative warrants. We also include a dummy for whether the respondent leverage their position through the use of margin account. Although, margin account is not a financial instrument, we consider it as a way to increase risk through leverage.

We test our hypothesis using OLS regressions with stress level index as dependent variable and dummy variable of whether the respondents use lottery stocks, derivative warrants or derivatives, and margin account as independent variable. We also add a set of control variables which includes age, a dummy variable for male, income, risk tolerance score, a dummy variable for single, a dummy variable for holding Bachelor Degree, a dummy variable for holding Master Degree or higher, financial literacy index, and trading experience. Income variable is winsorized at 95% in order to handle extreme values. This set of control variables is used throughout this study. All of our estimations use robust standard error.

Table 4 OLS regression of the stress level index on a dummy variable for using risky financial instruments and control variables.

Stress Level Index / Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
Lottery Stock	0.1978	0.1586				
	[0.164]	[0.321]				
Derivative Warrants or Derivatives			0.2844 **	0.2575 *		
			[0.036]	[0.091]		
Margin Account					0.1109	0.0876
					[0.684]	[0.761]
Additional Control variables	No	Yes	No	Yes	No	Yes
Number of obs	285	285	285	285	285	285
R-square	0.0072	0.0593	0.0485	0.0657	0.0007	0.0558

The table reports coefficients with P-value shown in brackets. *, **, and *** denote rejection of the null at the 90%, 95% and 99% confidence levels

2. Trading Activities

In this section, we investigate the impacts from trading activities of our respondents on their stress level. We will look into the three aspects of activities that may be related to stress; diversification, trading frequency, and being a day trader. We measure diversification by the number of individual stocks that our respondents hold in their portfolios. Greater number of individual stocks means better diversification. For trading frequency, we create a dummy variable for high frequency trading. Since in this survey, trading frequency variable is measured in ordinal scale (from 1 to 4), we assign 1 to the respondents whose trading frequency value is 3 or 4. Thus, when this is matched with the wording in trading frequency question within the survey, the value 1 for high frequency trading dummy can be interpreted as trading at least 3 or 4 times per weeks. Lastly, we also have a dummy variable for day trader. The dummy variable takes a value of 1 if 'the respondents buy and then sell within the same day. We expect that respondents who are considered 'day trader' or trade very frequently would feel more stressed, while those with good portfolio diversification would feel less stressed.

Table 5 OLS regression of the stress level index on trading activities variable and control variables.

Stress Level Index / Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
Number of Individual Stocks Owned	-0.0058	-0.0072				
	[0.566]	[0.516]				
High Trading Frequency			-0.2298 *	-0.2739 *		
			[0.086]	[0.065]		
Day Trader					-0.2366*	-0.2867 **
					[0.084]	[0.046]
Additional Control variables	No	Yes	No	Yes	No	Yes
Number of obs	259	259	285	285	285	285
R-square	0.0016	0.0555	0.0102	0.0678	0.0105	0.0687

The table reports coefficients with P-value shown in brackets. *, **, and *** denote rejection of the null at the 90%, 95% and 99% confidence levels.

The OLS regression results in Column (1) and (2) of Table 5 show that diversification is not related to stress at all as the coefficients of number of individual stocks owned are insignificant in both specifications. Thus, even though the diversification can reduce risk, it does not make the investors feel less stressed. The coefficients of high trading frequency in Column (3) and (4) are negative and significant at 90% confidence level. This suggests that Investors feel less stressed if they trade stocks frequently. For example, based on the coefficient in Column (4), those who trade stock more than 3 or 4 times a week have 0.27 lower stress level than those who do not trade as frequently. Being a day trader also has the same effect as trading frequently. In Column (6), the coefficient of day trader is -0.287 and significant. It implies that being a day trader also makes the investors feel less stressed.

Our findings that trading frequently and being a day trader make investors feel less stressed is a contradiction to our expectation. However, these results can be interesting. Since it has been observed that individual investors trade excessively (Odean, 1999; Barber and Odean, 2000), we might make a conjuncture that they are doing so not only because of monetary benefit but also to relieve

stress. This is in line with Dorn & Sengmueller's (2009) argument that investors may trade as an entertainment activity. Therefore, these traders may view stock trading as a hobby and enjoy doing so in their free time.

3. Trading Objectives

We examine whether the objectives of trading stock impact stress level of the investors. We divided investors into groups based on their objectives. The first objective is to earn money. Some investors trade stocks to earn extra income on top of their wages, while others do it as a mean to make their livings. Based on the question "*Do you need the return from your investment for your expenses?*," we create two dummy variables for respondents who answer "*Some*" and "*Needed.*" The second objective is for gambling. Some investors view trading stock as an alternative for a gamble (Kumar, 2009; Assanangkornchai et al., 2016; Cox, Kamolsareeratana, & Kouwenberg). We use *gambling propensity index* as an independent variable in order to test gamble objective. Lastly, some investors trade stocks simply because they are addicted to it. We measure addiction to trading stocks with *addiction index*.

Table 6 OLS regression of the stress level on trading objectives and control variables.

Stress Level Index / Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
Need Some Money (Some)	0.1195	0.1681				
	[0.390]	[0.234]				
Money is Needed (Needed)	0.6043***	0.5884**				
	[0.010]	[0.011]				
Gambling Propensity Index			0.1210	0.0552		
			[0.298]	[0.622]		
Addiction Index					0.1858***	0.1794***
					[0.000]	0.001]
Additional Control variables	No	Yes	No	Yes	No	Yes
Number of obs	285	285	285	285	285	285
R-square	0.0273	0.0802	0.0037	0.0562	0.0500	0.0964

The table reports coefficients with P-value shown in brackets. *, **, and *** denote rejection of the null at the 90%, 95% and 99% confidence levels.

The results in Column (1) and (2) of Table 6 show the impact of trading for money on stress level. Although the coefficients for 'Need some money from trading' are insignificant, those of 'Money is needed' are positive and highly significant. Compared to the investors who do not need money form trading, the stress level of those who do is 0.59 higher. This suggests that making a living from trading stock can be quite stressful. Becoming a full-time trader might not be as easy as it seems after all. In Column (3) and (4), the coefficients of gambling propensity index are insignificant. This means the investors who like gambling do not feel more stressed. This result is consistent with the finding from prior studies that investors have other motives, such as entertainment, to trade (Dorn, & Sengmueller, 2009; Cox, Kamolsareeratana, & Kouwenberg 2020). The results from Column (5) and (6) show that being addicted to trading cause stress. The coefficients on both specifications are positive and highly significant.

Our results show that the reason for trading stocks is an important factor that determines the stress level of the investors. If the participation in the stock market is voluntary (e.g. for gamble), it would have no impact on the investors' stress level. However, when the participation becomes necessary (e.g. trading for money) or beyond self-control (e.g. addiction), the stress increases.

Conclusion

We examine the impact of financial instrument choices on the stress level of investors. We find no evidence that investors who trade lottery stocks or use margin account to gain leverage are more stressed than other investors. However, our result shows that trading derivative warrants on the other hand can cause more stress.

Next, we look into the influence of trading activities. We find that diversification by holding many individual stocks in portfolio does not help reduce the stress level of the investors. Contrary to our expectation, our findings show that trading frequently and being a day trader decrease stress. An explanation for this result can be because investors viewed trading stocks as a hobby or a mean to reduce stress. This is in line with Dorn, & Sengmueller's (2009) argument that some investors trade for entertainment.

Lastly, we show that investors who need money from trading for their expenses feel substantially more stressed than those who do not need the money. Similarly, investors who are addicted to trading have higher stress level. We find no evidence that investors who like gamble are more stressed. The results are consistent with Cox, Kamolsareeratana, & Kouwenberg (2020).

Research Implications

Our study has implications on both individual investors and policy makers. Since trading stock can be stressful and stress is hazardous to health, an individual should think carefully about the choices of financial instrument to use and actions to be taken before trading. More importantly, it is very stressful to make money for living solely from trading stocks. One should be cautious about quitting a job and become a full-time stock trader. As for policy makers, we show that products such as derivative warrants can be stressful for some investors, therefore individual investors should be provided with sufficient information or warnings before engaging with such products.

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